E520 / E521

Incremental rotary encoder

Incremental rotary encoders with or without zero pulse, fit to servo-coupling, and compatible to the international standardized series SIZE23; a flange type RE0444 is also available (series RE530). The compact electronic circuitry joins perfectly with the reliable and thoroughly tested mechanical construction, allowing to keep a favourable price/performance relation.

Mechanical and environmental specifications

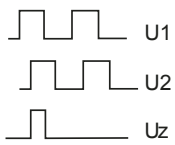
Dimensions	See the drawing
Weight	E520 280 g - RE520 320 g - RE530 600 g
Material: Case	E520 ABS self-extinguishing / RE520/RE530 aluminium
Shaft	Stainless steel AISI 303
Shaft diameter	6 or 8 or 10 mm / RE530 11 mm
Revolutions per minute	6000 continuous* /10000 temporary * Max operating speed with IP65 sealing ring applied on the shaft: 3000 rpm
Starting torque	≤ 0.8 Ncm
Inertia	≤ 25 g cm^2
Max load	80 N axial / 100 N radial
Vibrations resistance (10÷2000 Hz)	100 m/sec^2
Shock resistance (11ms)	50 G
Protection degree	IP64 (optional IP 65)
Operating temperature	-10 ÷ +70ºC
Stocking temperature	-20 ÷ 80ºC

Electrical and operating specifications

Pulse code	Incremental
Pulses-revolution	2 ÷ 25000
Zero reference pulse	1 pulse each revolution
Output Signals	Two square waves 90°±15° out of phase. Zero pulse 90°±15° wide
Electronic output	Push-pull, line-driver, open collector NPN or PNP, pull-up resistor NPN or PNP. Protection against short circuits
Supply	10÷24 Vdc or 5 Vdc±5%. Protection against polarity reversal
Current consumption	30÷80 mA
Max frequency	100 KHz
Connection outlets	Axial or radial connector type MS 7p (10p for line driver output) Axial or radial cable 3 m long (1 m for line driver output)

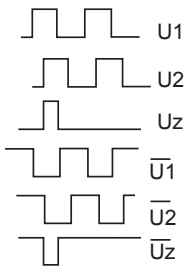
Electronics

• Open collector - pull-up resistor - push-pull



Supply
10 ÷ 24 Vdc
5 Vdc ± 5%

• Line driver



Supply
10 ÷ 24 Vdc
5 Vdc ± 5%

With connection diagram 1-3-4: signal U2 lags signal U1 with clockwise rotation (seen from the shaft side).
With connection diagram 2: signal U2 lags signal U1 with anticlockwise rotation (seen from the shaft side).

Connections

• **Open collector - pull-up resistor - push-pull**

• **Scheme 1**

A	= Signal 1
B	= Signal 2
C	= Signal Z (for types with zero pulse only)
D	= +Vdc
E	= Non connected
F	= O V
G	= Non connected

• **Scheme 2**

A	= O V
B	= Non connected
C	= Signal 1
D	= Signal Z (for types with zero pulse only)
E	= Signal 2
F	= +Vdc
G	= Non connected

• **Cable outlet**

White	= Signal 1
Green	= Signal 2
Brown	= Signal Z (for types with zero pulse only)
Red	= +Vdc
Blue	= O V
Shield	= Earth

• **Line driver** • **Scheme 3**

A	= Signal 1
B	= Signal $\overline{2}$
C	= Signal $\overline{1}$
D	= +Vdc
E	= Signal $\overline{2}$
F	= O V
G	= Non connected

• **Scheme 4 (with zero pulse)**

A	= Signal 1
B	= Signal 2
C	= Signal Z
D	= +Vdc
E	= +Vdc
F	= O V
G	= Signal $\overline{1}$
H	= Signal $\overline{2}$
I	= Signal $\overline{Z}$
J	= Non connected

Ordering information

E520 | - - | 500 | 1024 | R | 6 | PP | 2

CONNECTION SCHEME
1 scheme 1
2 scheme 2
3 scheme 3
4 scheme 4

ELECTRONIC
PP push-pull
LD line driver 5V o 10/24Vdc
OC open collector NPN
OP open collector PNP
S pull-up resistor NPN
SP pull-up resistor PNP

SHAFT DIAMETER
6 - 8 - 10 mm
11 mm (serie RE530/531)

CONNECTIONS POSITION
A axial
R radial

SUPPLY
10/24 Vdc
5 Vdc

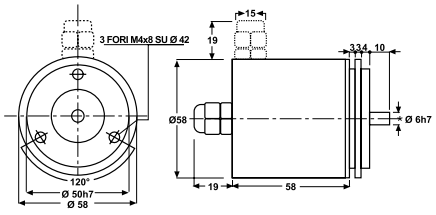
PPR NUMBER
2 - 25000

CONNECTIONS
— connector outlet
C cable outlet

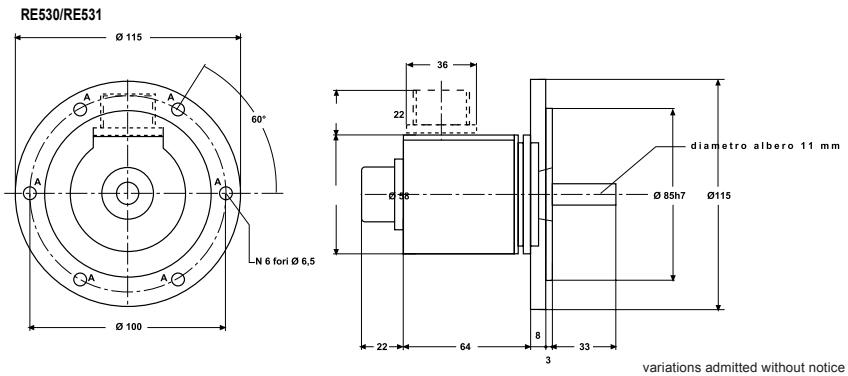
TYPE
E520 , without zero pulse
E521 , with zero pulse
RE520, without zero pulse, aluminium case
RE521, with zero pulse, aluminium case
SERIES RE530/RE531 - aluminium case, flange RE0444

Dimensions

E520 / E521
RE520 / RE521



RE530/RE531



* AVAILABLE SHAFT DIAMETERS 8 mm - 10 mm (length 20 mm)

variations admitted without notice

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